

* TUBERCULOSIS PROGRAM
REVIEW OF SONORA, MEXICO
JULY 17-19, 1995

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Reviewers:

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MVZ Alejandro Perera - USDA:APHIS:IS

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INITIALISMS:

CENASA {Centro Nacional de Servicios de Diagnostico en Salud Animal} - National Center of Animal Health Diagnostic Services

CONETB {Comisión Nacional para la Erradicación de la Tuberculosis Bovina y Brucelosis} - National Commission for the Eradication of Bovine Tuberculosis and Brucellosis: federal agency

DDR {Distrito de Desarrollo Rural} - Rural Development District: state geopolitical division

DVM - Doctor of Veterinary Medicine

MVZ {Médico Veterinario Zootecnista} - Zootechnical Veterinary Doctor

NOM {Norma Oficial Mexicana} - Official Mexican Standard: federal regulations for tuberculosis

SAGAR (formerly SARH) {Secretaría de Agricultura, Ganadería y Desarrollo Rural} Secretariat of Agriculture, Livestock and Rural Development: federal agency

SCC {Comité de la Campaña de Erradicación de la Tuberculosis Bovina y Brucelosis del Estado de Sonora} Committee for the Bovine Tuberculosis and Brucellosis Eradication Campaign in the State of Sonora: tripartite committee in the state

SFG {Secretaría de Fomento Ganadero} - Secretariat of Livestock Development: state agency

TAHC - Texas Animal Health Commission: state agency

TIF {Tipo Inspección Federal} - Federal Inspection Type: federally inspected slaughter plant that must meet special standards for export certification

UGRS {Union Ganadera Regional de Sonora} - Sonoran Regional Livestock Union

USDA:APHIS:IS - United States Department of Agriculture: Animal and Plant Health Inspection Service: International Services: federal agency

USDA:APHIS:VS - United States Department of Agriculture: Animal and Plant Health Inspection Service: Veterinary Services: federal agency

PURPOSE OF REVIEW:

To provide an overall evaluation of the bovine tuberculosis (TB) program in Sonora, with emphasis on assessment of the program status with regard to fulfillment of the Stage 1 - Control/Preparatory Phase importation requirements of Texas and New Mexico (realizing that the Bi-National TB Committee already agreed that Sonora complied with the Texas/New Mexico requirements, provided that this review did not find information to the contrary)

REVIEW ACTIVITIES IN THE STATE OF SONORA:

July 17, 1995

- Visited "Las Guasimas" intrastate quarantine/inspection station in Guaymas
- Observed activities at the TIF Number 67 slaughter establishment in Ciudad Obregon
- Visited "Estacion Don" interstate quarantine/inspection station (bordering the state of Sinaloa) in Don

July 18, 1995

- Observed caudal fold tuberculin injections of cattle in Navojoa tested for intrastate movement
- Observed activities at the municipal slaughter establishment in Navojoa

July 19, 1995

- Visited the State Public Health Laboratory in Hermosillo
- Visited TB eradication campaign offices in Hermosillo to review records
- Met with members of the SCC at the UGRS offices in Hermosillo

BACKGROUND:

Sonora is a northern Mexican state bordered by the U.S.A. to the north, and the Mexican states of Chihuahua to the east, Sinaloa to the south, and Baja California Norte to the west (Appendix 1). The Gulf of California also borders a majority of western Sonora. Politically, Sonora is divided into 11 rural development districts (DDRs) (Appendix 1) encompassing 70 municipalities.

Although the TB eradication program began in early 1991, the governor of Sonora did not decree the establishment of a Committee for the Bovine Tuberculosis and Brucellosis Eradication Campaign in the State of Sonora (SCC) until December 1991. The organizational hierarchy of the SCC is shown in Appendix 2. The President, Secretary and Treasury of the Governing Council of the SCC consists of the following representatives from state, federal and industry organizations respectively: Secretary of the Department of Livestock Development for the State of Sonora (SFG), a Delegate in Sonora from the Secretariat of Agriculture, Livestock and Rural Development (SAGAR) and the President of the Sonoran Regional Livestock Union (UGRS). The executive officers, along with 11 cattlemen appointed as the presidents of the campaign subcommittees in each rural development district, make up the Board of Directors of the SCC. Decisions from the Board are referred to an Executive Director for implementation. The Executive Director is responsible for the day-to-day management of the eradication program. His technical staff of "official" veterinarians includes a Coordinator for Sonora from the National Commission for the Eradication of Bovine Tuberculosis and Brucellosis (CONETB) and 11 district supervisors (Appendix 3). Two of these supervisors along with a third veterinarian, who also serves as an assistant to the Coordinator, have been designated as regional epidemiologists for the state. The district supervisors supervise 60% of the tuberculin testing performed by approximately 98 veterinarians "approved" (or accredited, the two terms are used interchangeably) to conduct tuberculin testing. As in other states, veterinarians have to attend a special course sponsored by SAGAR and pass an examination to attain an approved status. Veterinary approval must be renewed every 2 years. In general, caudal fold testing is performed by the approved veterinarians. Single cervical and comparative cervical testing is usually conducted by the official veterinarians, but can be carried out by approved veterinarians under supervision by an official veterinarian. Testing in quarantined herds is conducted by one of the 11 district supervisors.

Two other SAGAR veterinarians working in the Sonoran state campaign are the General Coordinator of Animal Health Programs and the Chief Veterinarian for federal meat inspection in the state. In addition, Sonora has a northern and southern zone supervisor for livestock movement control. Approximately 85% of the resources for the TB campaign have been provided by the livestock producers.

The long-term objective of the Sonoran campaign is to eradicate bovine tuberculosis from the state and become regionalized with the state of Arizona, a TB-free state in the U.S.A. The intermediate goal is to achieve a status equivalent

to a modified accredited state in the U.S.A. Initially, when the TB campaign began in 1991, the plan was to tuberculin test every herd twice and then conduct an annual retest of 20% of the breeding cattle over six months of age. Testing would begin in the northern part of the state and progress southward. Herds with reactor animals would be quarantined and either depopulated or tested out of quarantine. In 1993, the testing goal was downgraded to testing all herds in the state at least once. This change in strategy was based on a need for standardization of TB eradication efforts throughout the Mexican states and the severe drought conditions in northern Mexico which were adversely affecting ranching. Specific goals for 1995 are to complete testing of 100% of the breeding cattle in the state, depopulate 4 TB-infected herds, conduct 15,000 tuberculin tests in dairy herds and 27,000 tests in mixed purpose herds, establish a slaughter surveillance system which will monitor 80%-90% of the cattle slaughtered in the state, maintain the quarantines on infected herds and continue to conduct epidemiologic investigations.

The estimated number of cattle herds in Sonora consists of 5,503 beef and 193 dairy herds (Appendix 4). The dairy herds are divided into "estabulado" and "rustico" categories. The former are Holstein dairies that are more technically-managed herds, whose owners belong to the state Dairy Cattlemen's Association. The latter includes herds with any breed of dairy cattle, less technically-managed and whose owners do not belong to the Dairy Cattlemen's Association. In all, 5,561 of the total 5,696 (98%) cattle herds have been caudal fold tuberculin-tested, yielding 202 (3.55%) herds with tuberculin reactors. Almost one third of the herds have been tested twice (Appendix 5).

The cattle inventory consists of an estimated 1,185,205 cattle consisting of 1,144,199 beef and 41,006 dairy animals (11,352 and 29,654 in the "estabulado" and "rustico" categories, respectively) (Appendix 6). Taking into account both first and second tests, a total of 1,547,326 caudal fold tests had been conducted in beef cattle by July 13, 1995 with 1,656 (0.11%) positive test responses. In dairy cattle, a total of 101,674 caudal fold tests were performed, with 959 (0.94%) responses recorded. Therefore, in total 1,649,000 caudal fold tests were performed, revealing 2,615 (0.16%) caudal fold responses.

Bacilloscopy, histopathology and bacteriology for TB are now being conducted at the State Public Health Laboratory in Hermosillo. Previously, samples were sent to the laboratory in Mexicali, Baja California Norte. Now some duplicate samples are still being sent to Mexicali for laboratory confirmation as a quality control measure. Isolations are being sent to the National Center of Animal Health Diagnostic Services (CENASA) in Mexico City for typing. Of the 1,671 samples submitted for laboratory diagnosis since 1992, bacilloscopy, histopathology, bacteriological, and typification were performed on 1,354, 317, 298 and 14 of these samples, respectively (Appendix 7). Bacilloscopy was positive on samples from 58 herds, yet histopathology revealed TB in only 45 herds (Appendix 8). Of these 45 herds, 12 have been depopulated, leaving 33 under quarantine today. Depopulation is planned in 4 of these quarantined herds.

Sonora has 5 federally-inspected (TIF) slaughter establishments for cattle, two private slaughter houses and 71 municipal slaughtering facilities (two in one municipality and one in each of the others), of which many are very small, slaughtering less than 50 head per year. TB slaughter surveillance was initiated in 1994 in slaughter plants in the northern part of the state and has progressed southward. As of December 1994, slaughter surveillance was being conducted in 13 plants. Today, a total of 22 plants, including all of the TIF plants, have TB slaughter inspection. These plants slaughter more than 85% of the cattle slaughtered in the state. In some instances, TB campaign funds are used to supplement salaries of inspectors in slaughter plants to encourage the inspection for, and submission of, suspicious TB lesions. From January 1-July 8, 1995, the 22 plants with slaughter surveillance slaughtered 40,973 head of cattle, from which 102 TB suspicious lesions were submitted to the laboratory (Appendix 9). Of these samples, 25 were found to be TB-positive on histopathological examination.

Two of Sonora's natural borders, the Gulf of California to the west and the Sierra Madre mountain range to the east along the border with Chihuahua assist in preventing cattle movement into the state. In addition, Sonora has several strategically-placed quarantine/inspection and tick dipping stations (Appendices 10-11). After the conversion of one dipping station into a quarantine station and the opening of another quarantine station, Sonora will have nine quarantine stations and two separate dipping facilities. Cattle coming into Sonora must have proof of tuberculosis testing. If proof is not presented at the quarantine (inspection) stations, the animals are held until TB-tested or until deported. Any cattle that are to remain in the state are to be retested for TB sixty days after the first test. If these animals are then being exported to the U.S.A., a third test will be required, sixty days after the second test.

MINOR SUGGESTIONS BASED ON OBSERVATIONS:

2. Review tuberculin test procedures and equipment

We observed caudal fold tuberculin injections using a needle with a gauge and length (25 g. and 16 mm.) differing from that specified in the Mexican Official Norm (NOM). The tuberculin was correctly administered intradermally, however. Also, out of 1,649,000 total caudal fold tuberculin tests, only 2,615 (0.16%) responses were reported (Appendix 6). This percentage is lower than the expected percentage for false-positive responses alone. Therefore, monitoring of tuberculin testing should be continued to ensure that veterinarians are using the correct procedures and recording any caudal fold tuberculin response.

2. Monitor and Expand Slaughter Surveillance

Slaughter surveillance has just begun at some plants and needs to be refined. The need for a good correlation system between the hide, head, carcass, viscera and pluck should be stressed. All identification devices should be

collected to assist in slaughter tracebacks. Adequate lighting for inspection is needed. Continue to push for slaughter surveillance in plants not currently conducting TB inspections.

3. Epidemiologic investigations

Only 50% of 8 slaughter tracebacks were traced to the herd of origin, with the other 50% traced only to feedlots. Thorough investigations (and adequate identification/records) are needed for slaughter tracebacks to the herd of origin. Also, thorough tracing of potential infected animals, into and out of herds, will facilitate the identification of other potentially infected herds.

As was expected, the Sonoran program was very advanced in their area testing and slaughter surveillance as compared to other Mexican states.

EVALUATION FOR STAGE 1 - CONTROL/PREPARATORY PHASE REQUIREMENTS

1. Functional State Animal Disease Committee? - YES
2. State Regulatory Authority? - YES
3. Acceptance of the Norma Oficial Mexicana (NOM)? - YES
4. Functional Infrastructure? - YES
5. Systematic, Organized, Large Scale Area Testing? - YES
Implementation of Effective, Reliable Slaughter Surveillance? - YES
6. Educational Aspects - YES

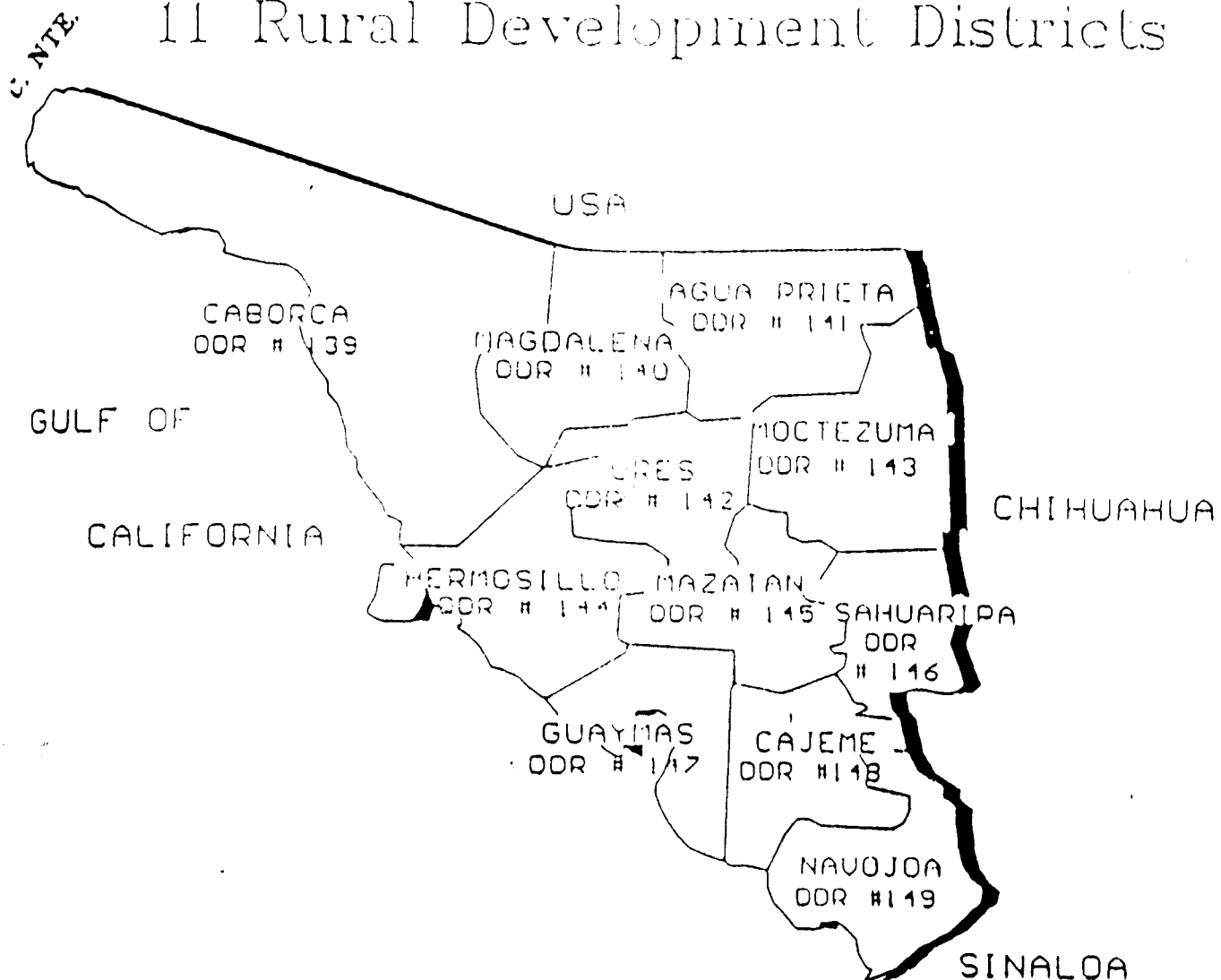
Sonora would also like to be considered for fulfilling Stage 2 - Eradication Phase (Equivalent to Modified Accredited) requirements.

APPENDICES

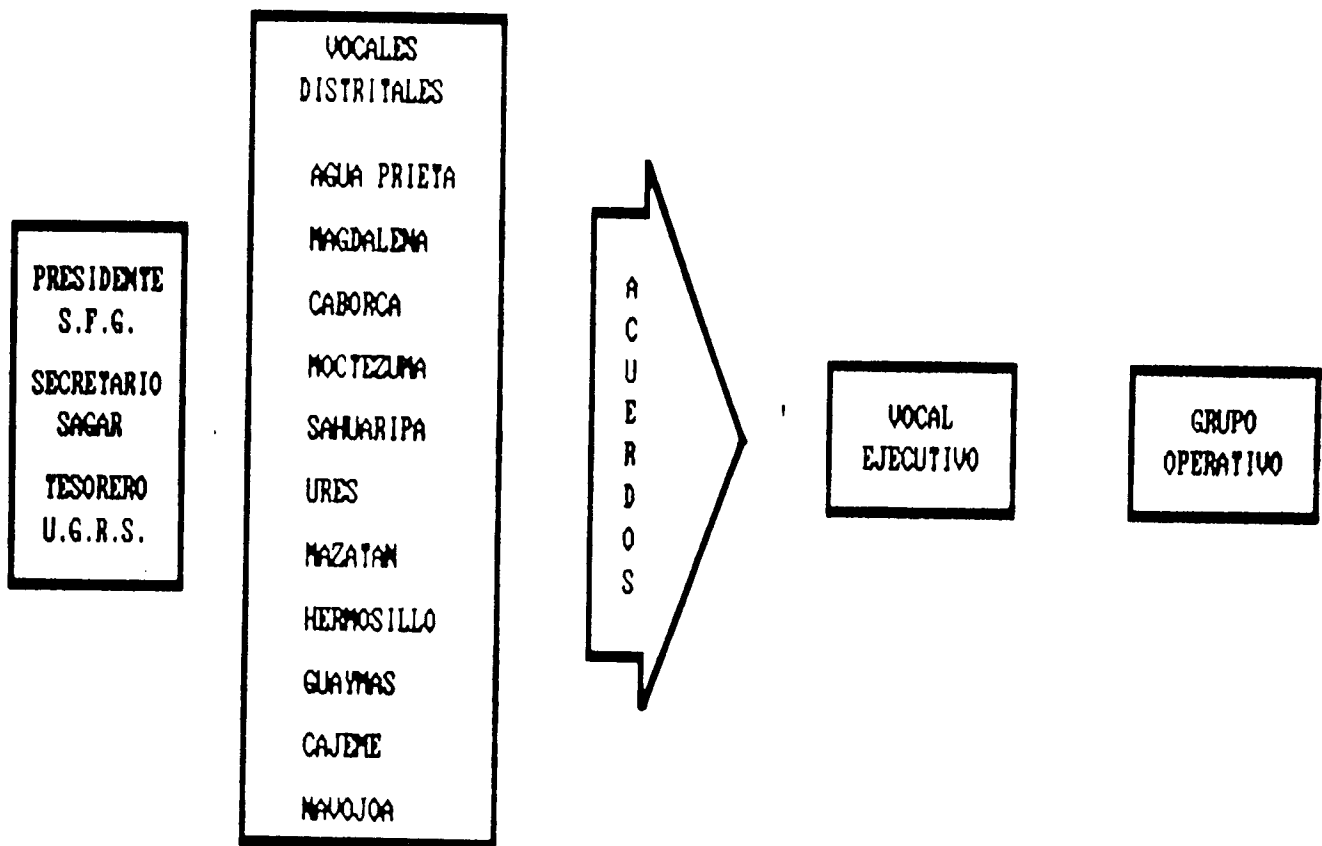
(INFORMATION SUPPLIED BY THE SCC AND RICK WILLER)

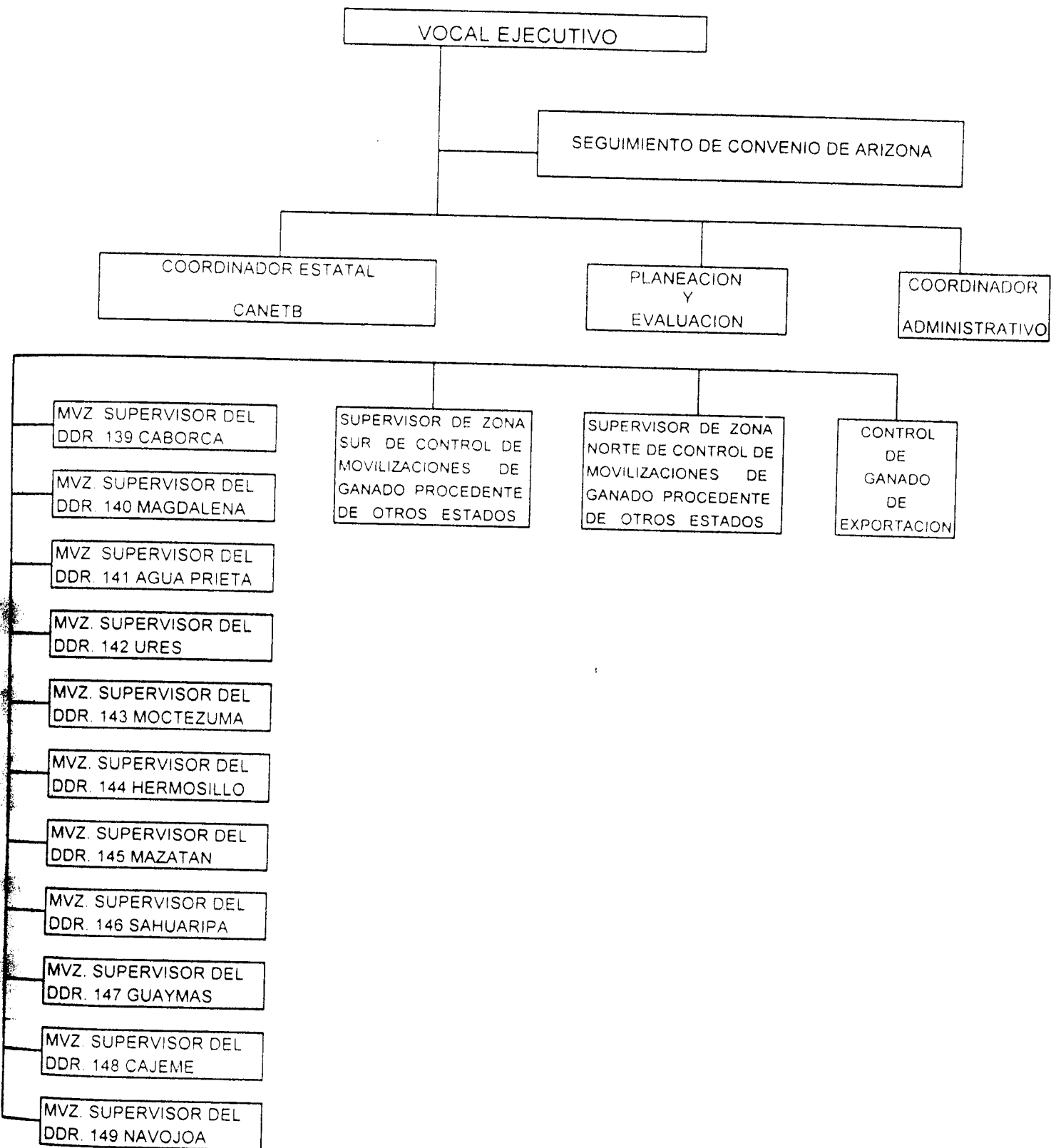
SONORA

11 Rural Development Districts



CONSEJO DIRECTIVO ESTATAL DEL COMITE
DE CAMPAÑA CONTRA LA TUBERCULOSIS
BOVINA Y BRUCELOSIS EN SONORA





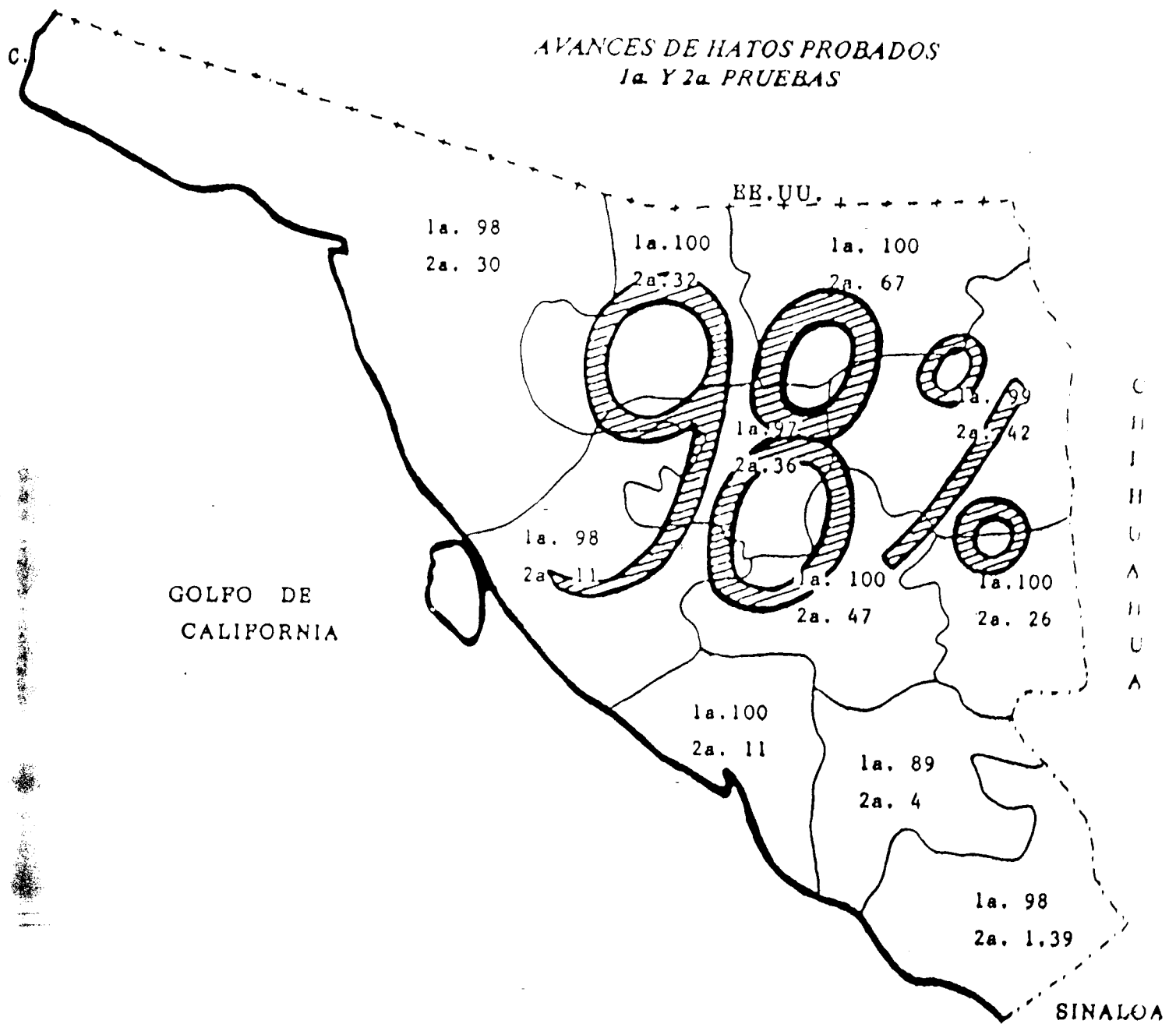
AVANCE DE LA CAMPANA Y NIVELES DE PREVALENCIA
DE REACTORES POSITIVOS

HATOS	NÚMERO DE HATOS ENCUESTADOS	TUBERCULOSIS				BRUCELOSIS			
		NÚMERO DE PRUEBAS	NÚMERO DE HATOS REACTORES		PORCENTAJE DE PREVALENCIA		NÚMERO DE PRUEBAS	NÚMERO DE REACTORES	PORCENTAJE DE PREVALENCIA
			A C	C LAB	A C	C LAB			
DE CAMPO	5,503	5,368	134	15	2.5	0.28	5,336	378	7.0
LECHERO	62	62	44	6	70	9.68	62	9	14.5
ESTABULADO									
LECHERO (2)	131	131	24	12	18.3	9.1	131	22	16.7
RUSTICO									
TOTAL	5,696	5,561	202	33	3.55	0.58	5,529	409	7.39

(1) SI AUMENTO EL NÚMERO DE HATOS POR TRANSFERENCIA DE HATOS MIXTOS A HATOS DE CORRE.
(2) SI REDUJO EL NÚMERO DE HATOS POR IDENTIFICARSE EN AREA COMUN.

DATOS AL 07 DE JULIO DE 1955.

COMITÉ DE CAMPAÑA PARA LA ERRADICACIÓN DE LA
TUBERCULOSIS BOVINA Y BRUCELOSIS
EN EL ESTADO DE SONORA



DATOS AL 15 DE MAYO DE 1995.

AVANCE DE LA CAMPANA Y NIVELES DE PREVALENCIA DE REACTORES POSITIVOS

HATOS	NUMERO DE HATOS ESTIMADOS	TUBERCULOSIS					BRUCELOSIS		
		NO. DE HATOS PROBADOS	NO. DE HATOS REACTORES		PORCENTAJE DE PREVALENCIA		NO. DE HATOS PROBADOS	NO. DE HATOS REACTORES	PORCENTAJE DE PREVALENCIA
			A.C.	C.LAB.	A.C.	C.LAB.			
DE CAMPO	5,503	5,368	134	15	2.5	0.28	5,336	378	7.0
LECHERO	62	62	44	6	70	9.68	62	9	14.5
ESTABULADO									
LECHERO	131	131	24	12	18.3	9.1	131	22	16.7
RUSTICO									
TOTAL	5,696	5,561	202	33	3.55	0.58	5,529	409	7.39

(1) SI AUMENTO EL NUMERO DE HATOS POR TRANSFERENCIA DE HATOS MIXTOS A HATOS DE CORRAL.
(2) SI REDUJO EL NUMERO DE HATOS POR DECONTAMINACION EN ALMA CORRAL.

DATOS AL 07 DE JULIO DE 1955.

AVANCE DE LA CAMPAÑA Y NIVELES DE PREVALENCIA
DE REACTORES POSITIVOS

ANIMALES	NUMERO DE GABEZAS ENTENDIENDO	TUBERCULOSIS <i>de positivos TB</i>				BRUCELOSIS			
		NO. DE PRUEBAS REALIZADAS	NO. DE GABEZAS REACTORES		PORCENTAJE DE PREVALENCIA		NO. DE PRUEBAS REALIZADAS	NO. DE GABEZAS REACTORES	% DE PREVALENCIA
			A.C.	C.C.	A.C.	C.C.			
DE CAMPO	1' 144,199	1' 547,326	1,656	947	0.14	0.08	1' 515,452	1,976	0.17
LECHERO	11,352	56,760	665	227	5.85	2.0	56,000	97	0.85
ESTABULADO									
LECHERO	29,654	44,914	294	234	0.99	0.78	45,558	720	2.42
RUSTICO									
TOTAL	1' 185,205	1' 649,000	2,615	1,408	0.22	0.11	1' 617,010	2,793	0.24

DATOS AL 13 DE JULIO DE 1995

COMITÉ DE CAMPAÑA PARA LA ERRADICACIÓN DE LA TB BOVINA
Y BRUCELOSIS EN EL ESTADO DE SONORA

HATOS POSITIVOS A TUBERCULOSIS

	Laboratorio Ziehl Neelsen	Positivos Confirmados en laboratorio	Despoblados positivos	Existentes
HISTOPATOLOGÍA				
Ganado Lechero Estabulado	21	13	7	6
Ganado de Carne	25	20	5	15
Lechero Rústico	12	12	0	12
TOTAL	58	45	12	33

REPORTE MENSUAL DE INSPECCION EN RASTROS

D. D. R.	No. DE RASTROS	TUBERCULOSIS				BRUCELOSIS			
		NÚMERO DE CAREZAS INSPECCIONADAS		No. DE MUESTRAS SUSPECTAS DE TB. ENVIADAS A LAB.		No. DE MUESTRAS POSITIVAS A TB. HISTOPLASMA Y		No. DE MUESTRAS SANGRE COLECTADAS	
		ANTERIOR	MES	FECHA	ANTERIOR	MES	FECHA	ANTERIOR	MES
139 CABERCA	1	6,185	1,937	8,172	12	9	21	6,185	105
140 MOCALINA	3	4,181	1,074	5,215	7	10	17	3,292	1,014
141 OCHO PRIETA	3	5,169	1,508	6,677	15	7	22	5,169	1,508
142 ORES	-	0	0	0	0	0	0	0	0
143 MOCALINA	6	832	301	1,113	0	4	4	832	301
144 HERNANDEZ	3	10,366	6,222	16,588	21	2	23	9,917	5,102
145 MIZATECA	0	0	0	0	0	0	0	0	0
146 SANABRIPA	2	0	32	32	0	0	0	0	32
147 GUAYAS	1	0	928	928	0	2	2	0	0
148 CAJETE	-	0	0	0	0	0	0	0	0
149 MEXQUORA	3	659	1,619	2,278	8	5	13	659	1,619
TOTAL	22	27,392	13,581	40,973	63	39	102	26,054	9,701

* SE SUMAN AL INVENTARIO LOS RASTROS DE: TEPACHE, SANABRIPA, GUAYAS, MIZATECA Y MEXQUORA Y MEXQUORA Y MEXQUORA.

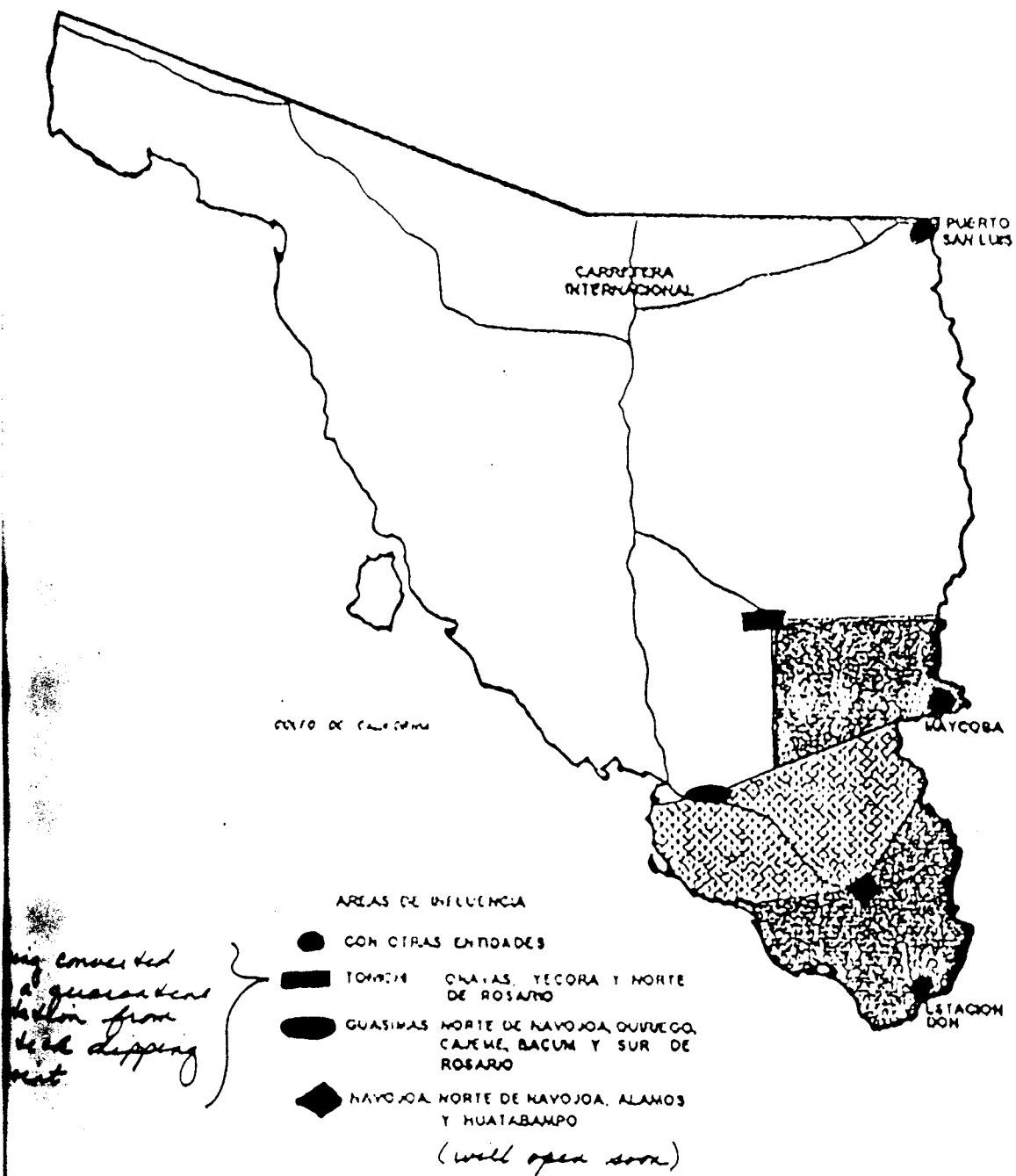
* SON CASOS NUEVOS

* RASTROS EXISTENTES

BASES CORRESPONDIENTES DEL 1 DE DICIEMBRE AL 31 DE DICIEMBRE DE 1954

GOBIERNO DEL ESTADO DE SONORA SECRETARIA DE FOMENTO GANADERO

LOCALIZACION DE ESTACIONES CUARENTENARIAS EN EL ESTADO DE SONORA



COMITE DE CAMPAÑA PARA LA ERRADICACION DE LA TUBERCULOSIS BOVINA Y BRUCELOSIS EN EL ESTADO DE SONORA

